Claims

1. A method for manufacturing a biosensor provided with an electrically insulating substrate (1); an electrode (2) having a working electrode (21) and a counter electrode (22) formed on the substrate; and a reaction part (4) that is adhered to one end of the electrode (2), the reaction part comprising an oxidoreductase, an electron acceptor, and fine crystalline cellulose powder;

the method comprising the following sequential steps of (A1) to (C1):

(A1) a step of forming the electrode (2) by disposing a working electrode (1) and a counter electrode (2) on the electrically insulating substrate (1) in parallel and in close proximity;

(B1) a step of preparing an application liquid for forming reaction part, by preparing a mixed solution A comprising a good solvent and three components consisting of an oxidoreductase, an electron acceptor, and fine crystalline cellulose, and then adding the mixed solution A to a poor solvent, while stirring, to produce dispersion liquid B; and

(C1) a step of forming the reaction part (4) by applying the application liquid for forming reaction part prepared in the step (B1) to one end of the electrode (2) on the electrically insulating substrate (1) obtained in the step (A1) and drying it.

2. A manufacturing method according to Claim 1, wherein the electrode is formed of at least one member selected from the group consisting of platinum, gold, palladium, and indium-tin oxides.

3. A biosensor obtainable by a manufacturing method of Claim 1 or 2.

4. A method for measuring the glucose component, alcohol component, lactic acid component or uric acid component in a sample solution using the biosensor of Claim 3.

5. A biosensor comprising an electrically insulating substrate (1); an electrode (2) having a working electrode (21) and a counter electrode (22) formed on the substrate; and a reaction part (4) that is adhered to one end of the electrode (2); the reaction part (4) being mainly composed of an oxidoreductase, an electron acceptor, fine crystalline cellulose powder, and a hydrophilic polymer containing hydrophilic and hydrophobic segments.

6. A biosensor according to Claim 5, wherein the hydrophilic polymer is composed of a straight-chain oxyalkylene segment(s) and an alkyl group-branched oxyalkylene segment(s).

7. A biosensor according to Claim 6, wherein the average molecular weight of the alkyl group-branched oxyalkylene segment in the hydrophilic polymer is 1500 to 4000, and the content of the straight-chain oxyalkylene segment(s) among all polymer molecules is 30 to 80 wt%.

8. A biosensor according to any one of Claims 5 to 7, wherein the reaction part (4) is formed by coating a dispersion comprising an oxidoreductase, an electron acceptor, fine crystalline cellulose, and a hydrophilic polymer composed of hydrophilic and hydrophobic segments.

9. A method for manufacturing a biosensor according to Claim 8, which comprises the following sequential steps of (A2) to (C2);

(A2) a step of forming an electrode (2) by disposing a working electrode (21) and a counter electrode (22) in parallel and in close proximity on an electrically insulating substrate

(1);

(B2) a step of preparing an application liquid for forming reaction part by preparing a mixed solution Ma comprising a good solvent and three components consisting of an oxidoreductase, an electron acceptor, and fine crystalline cellulose, then adding the mixed solution Ma dropwise to a polymer solution Pa containing the hydrophilic polymer dissolved in a solvent that has poor solubility with the three components but good solubility with the hydrophilic polymer, while stirring, to prepare a dispersion; and

(C2) a step of forming the reaction part (4) by applying the application liquid for forming reaction part prepared in the step (B2) to one end of the electrode (2) on the electrically insulating substrate (1) obtained in the step (A2) and drying it.

10. A biosensor comprising:

in its tip portion, an electrically insulating substrate (1) and a cover sheet (6) facing each other with a space in between and a spacer sheet (5) somewhere therebetween; and a reaction part (4) having an oxidoreductase in a holding space (S) formed by the substrate, the cover sheet and the spacer sheet end;

the liquid sample being delivered from the tip of the sensor into the holding space by capillary action, and an electrochemical change caused by an enzyme reaction between the liquid sample and the reaction part (4) being detected using an electrode (2) having a working electrode (21) and a counter electrode (22); and

the biosensor being provided with a projection (51) at only one side of the spacer sheet end in the holding space (S) with the projection extending toward the end of the biosensor.

11. A biosensor according to Claim 10, wherein an inside corner part (52) is formed on the spacer sheet

end.